

This listing of claims will replace all prior versions, and listings, of claims in the application:

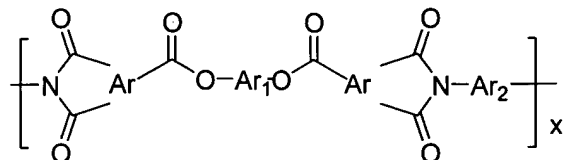
Listing of Claims:

Claim 1 (Currently amended) A process for separating one or more gases from a mixture of gases comprising the steps of bringing said a gaseous mixture into contact with a first side of a gas separation membrane such that a portion of said gas mixture permeates to a second side of said membrane and a portion of said gas mixture is collected as a nonpermeate, the resulting gas mixture on said second side of said membrane being enriched in one or more components over that of the mixture on the first side of said membrane, wherein said gas separation membrane is formed from a polymer containing a main-chain ester linkage, wherein said polymer is formed by a polycondensation reaction between an acetyl chloride and a phenol in presence of a catalyst.

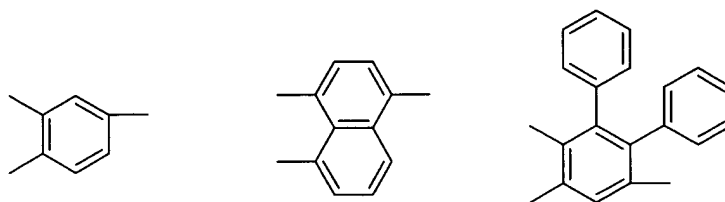
Claim 2 (Original) The process of claim 1 wherein said polycondensation reaction is catalyzed independently by toluenesulfonyl chloride, benzenesulfonylchloride, trimethylsilane chloride, and triphenyl phosphite or a mixture thereof.

Claim 3 (Currently amended) The process of claim 1 wherein said polymer is a polyester, a poly(ester amide), or a poly(~~etser~~ ester imide).

Claim 4 (Original) The process of claim 3 wherein said polymer is a poly(ester imide) of the following general formula:

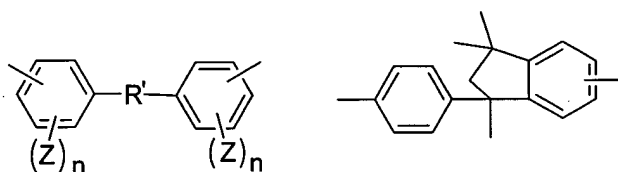
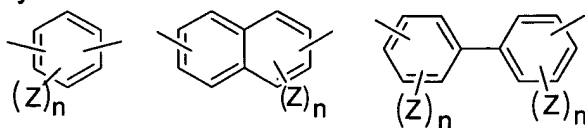


Where x is an integer larger than 10 and Ar is independently



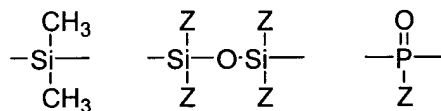
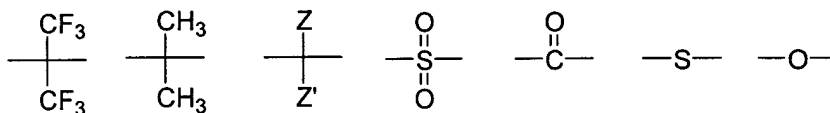
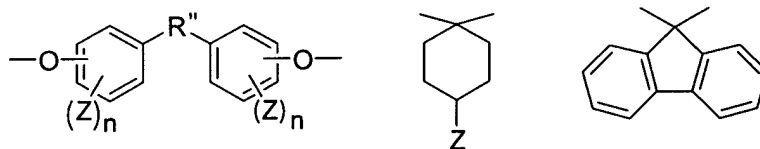
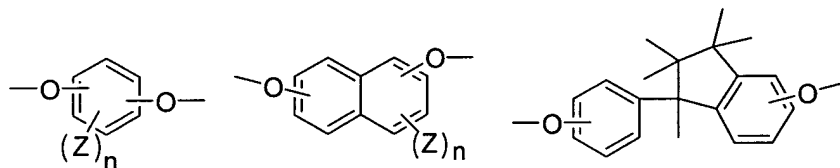
or a mixture thereof;

—Ar₁— is independently

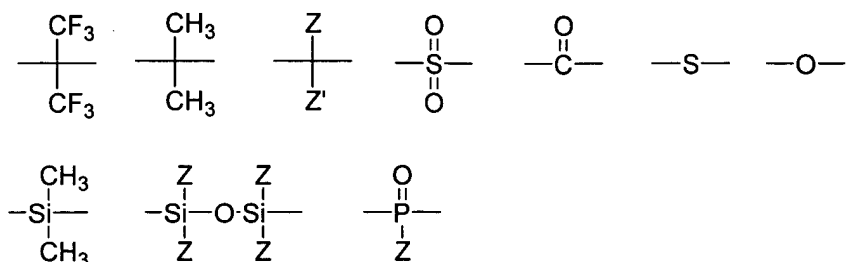


or a mixture thereof;

—R'— is

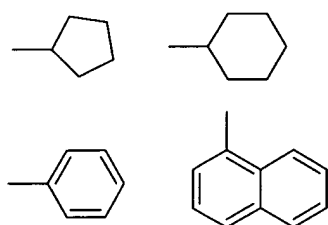


—R''— is



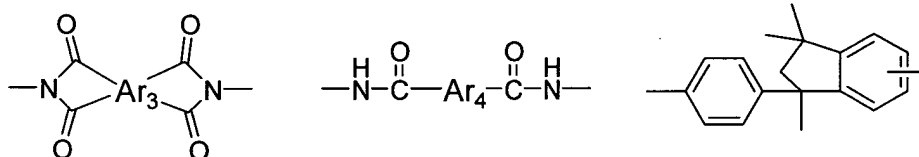
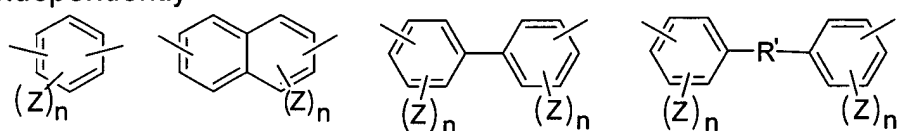
Z and Z' are:

-H, -CH₃, -CH₂CH₃, -CH₂CH₂CH₃, iso-propyl, iso-butyl, tert-butyl, -Br, -Cl, -F,
 -NO₂, -CN



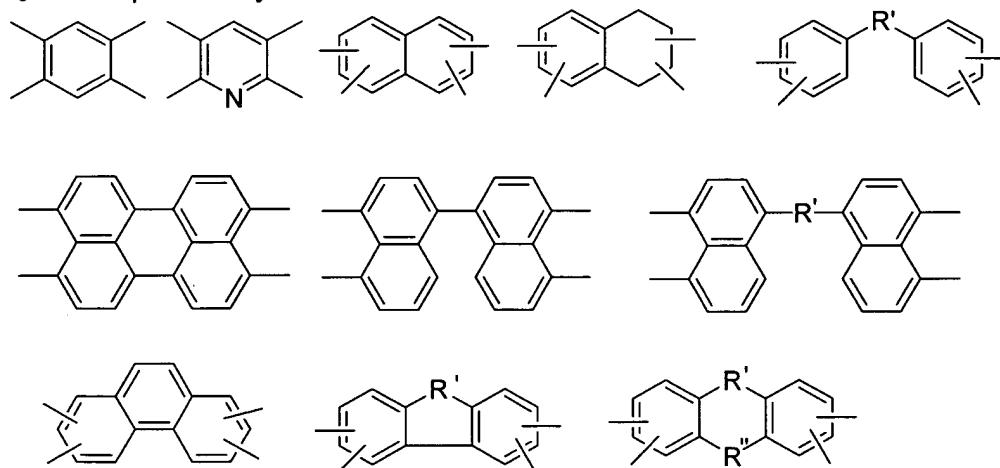
n = 0 - 4;

-Ar₂- is independently



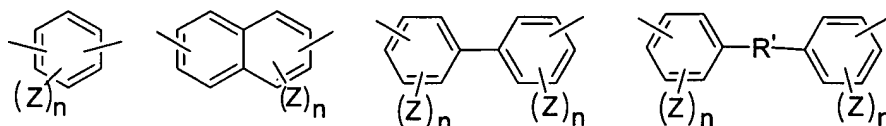
or a mixture thereof;

Where Ar₃ is independently

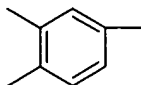


or a mixture thereof;

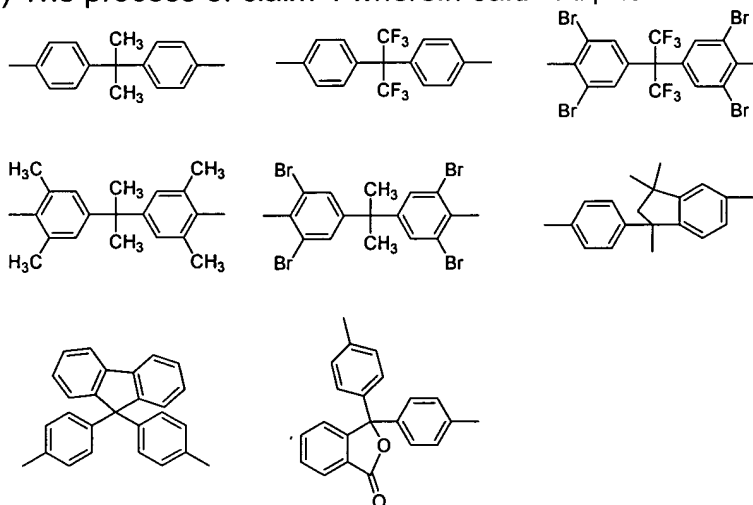
—Ar₄— is



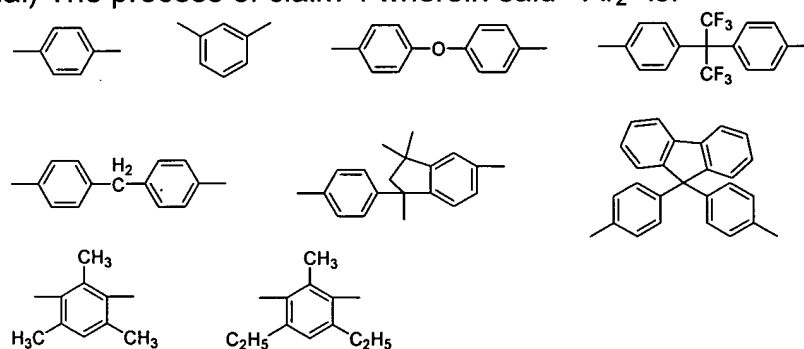
Claim 5 (Original) The process of claim 4 wherein said Ar is:



Claim 6 (Original) The process of claim 4 wherein said —Ar₁— is:



Claim 7 (Original) The process of claim 4 wherein said —Ar₂— is:

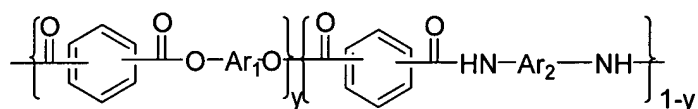


Claim 8 (Original) The process of claim 4 wherein said poly(ester imide) is formed by reacting tetrabromobisphenol A with one of the following dianilines: 4,4'-oxy-dianiline, 1,3-phenylenediamine, 1,4-phenylenediamine, 1,5-naphthalenediamine, 4,4'-

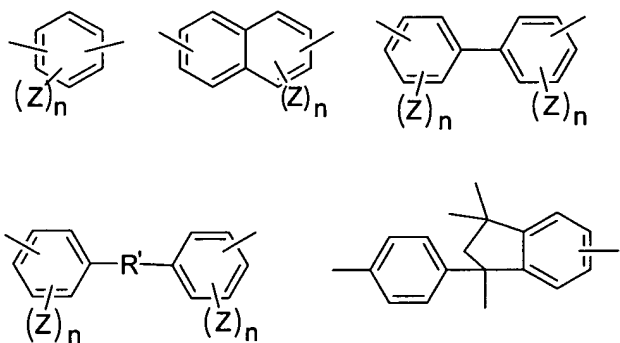
hexafluoroisopropylidene dianiline, 2,4,6-trimethyl-1,3-phenylene diamine, or a mixture thereof.

Claim 9 (Original) The process of claim 4 wherein said poly(ester imide) is formed by reacting 4,4'-hexafluoroisopropylidene bisphenol with one of the following dianilines: 4,4'-oxy-dianiline, 1,3-phenylenediamine, 1,4-phenylenediamine, 1,5-naphthalenediamine, 4,4'-hexafluoroisopropylidene dianiline, 2,4,6-trimethyl-1,3-phenylene diamine, or a mixture thereof.

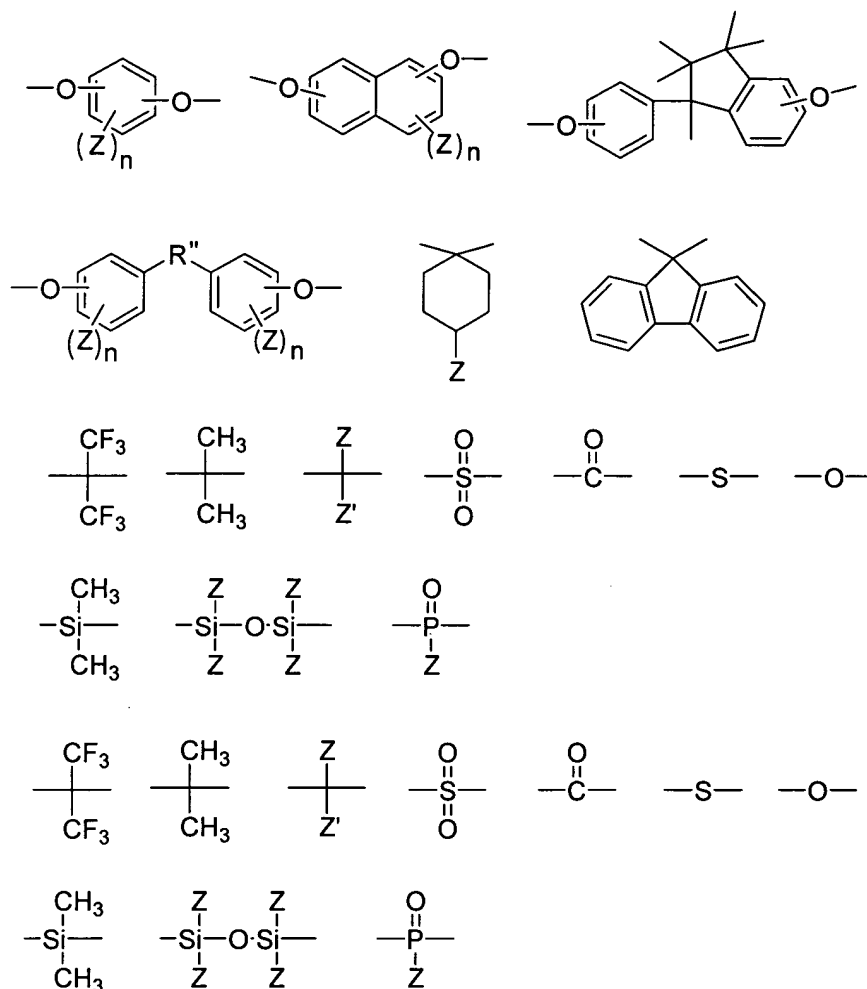
Claim 10 (Original) The process of claim 3 wherein said polymer is a poly(ester amide) of the following general formula:



Where y is between 0.01 and 0.99 and $-\text{Ar}_1-$ is independently



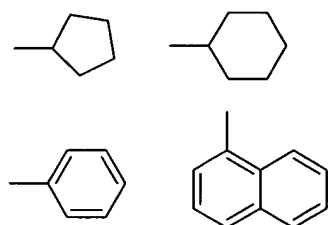
or a mixture thereof;
 $-\text{R}'-$ is



$-\text{R}''-$ is

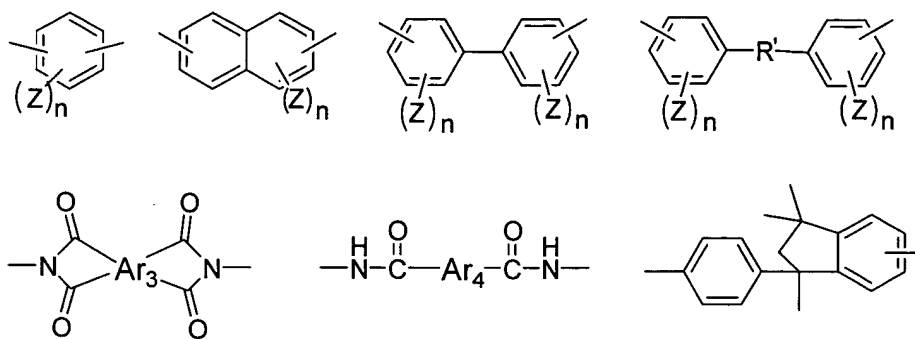
Z and Z' are:

$-\text{H}$, $-\text{CH}_3$, $-\text{CH}_2\text{CH}_3$, $-\text{CH}_2\text{CH}_2\text{CH}_3$, iso-propyl, iso-butyl, tert-butyl, $-\text{Br}$, $-\text{Cl}$, $-\text{F}$,
 $-\text{NO}_2$, $-\text{CN}$



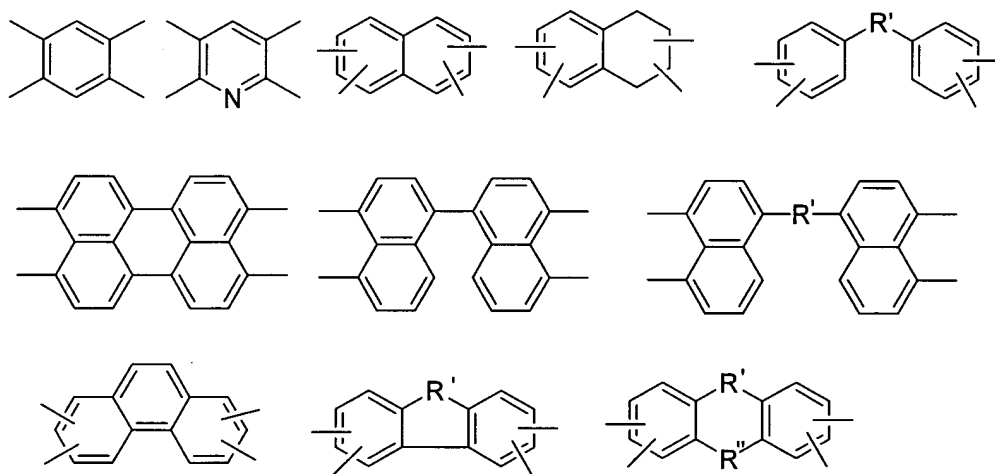
$n = 0 - 4$;

$-\text{Ar}_2-$ is independently



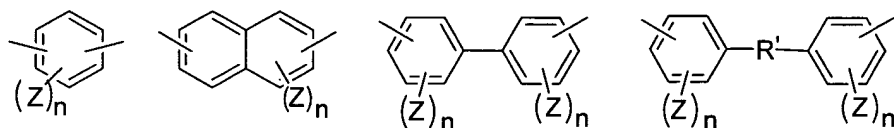
or a mixture thereof;

Where Ar_3 is independently

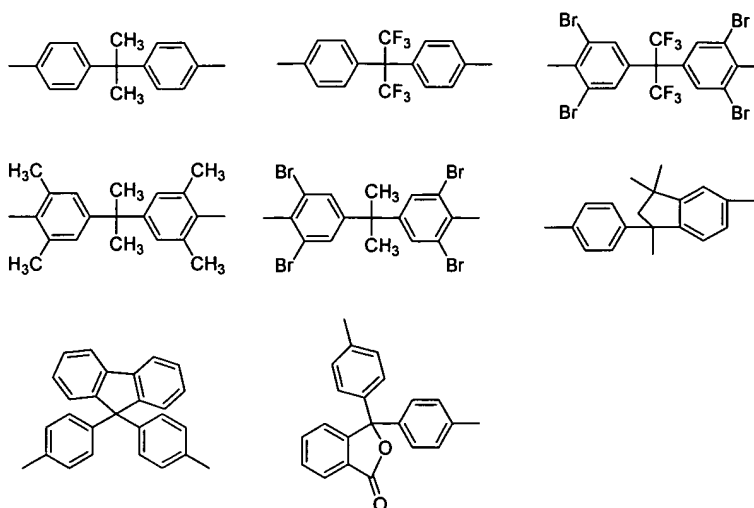


or a mixture thereof;

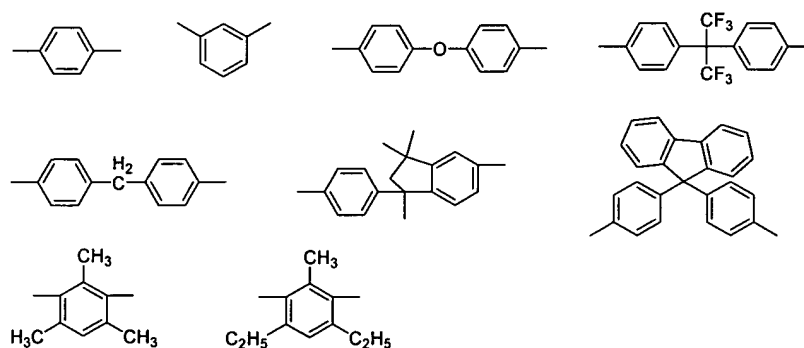
$-Ar_4-$ is



Claim 11(Original) The process of claim 10 wherein said $-Ar_1-$ is:



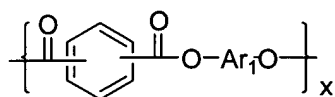
Claim 12 (Original) The process of claim 10 wherein said $-Ar_2-$ is:



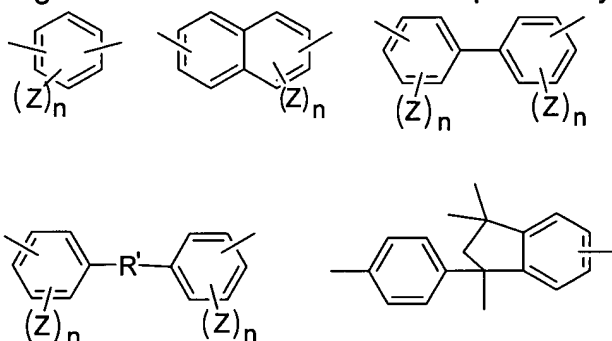
Claim 13 (Original) The process of claim 10 wherein said poly(ester amide) is formed by reacting tetrabromobisphenol A with one of the following dianilines: 4,4'-oxy-dianiline, 1,3-phenylenediamine, 1,4-phenylenediamine, 1,5-naphthalenediamine, 4,4'-hexafluoroisopropylidene dianiline, 2,4,6-trimethyl-1,3-phenylene diamine, or a mixture thereof.

Claim 14 (Original) The process of claim 10 wherein said poly(ester amide) is formed by reacting 4,4'-hexafluoroisopropylidene bisphenol with one of the following dianilines: 4,4'-oxy-dianiline, 1,3-phenylenediamine, 1,4-phenylenediamine, 1,5-naphthalenediamine, 4,4'-hexafluoroisopropylidene dianiline, 2,4,6-trimethyl-1,3-phenylene diamine, or a mixture thereof.

Claim 15 (Original) The process of claim 3 wherein said polymer is a polyester of the following general formula:

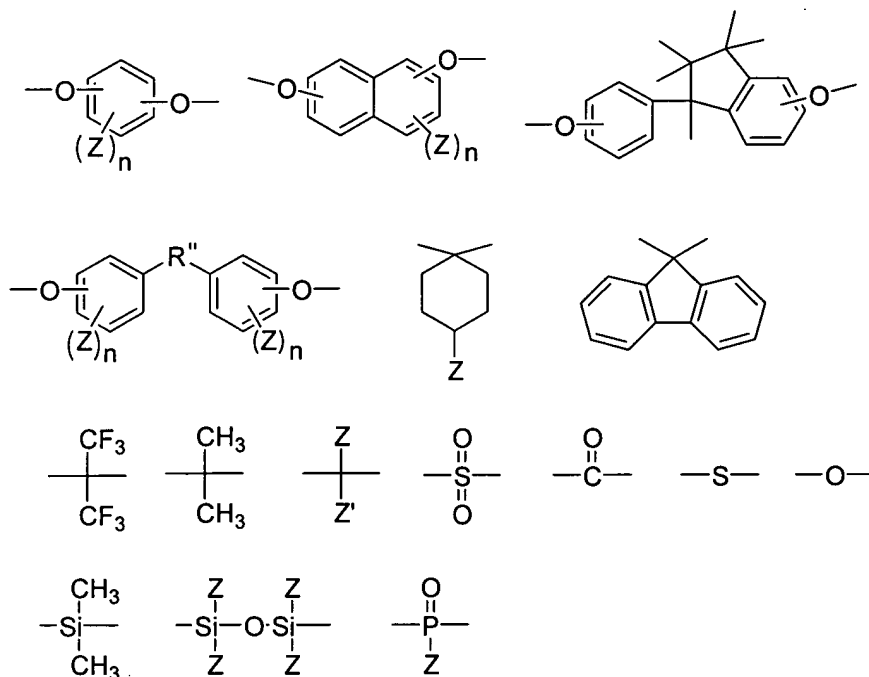


Where x is an integer larger than 10 and $-\text{Ar}_1-$ is independently

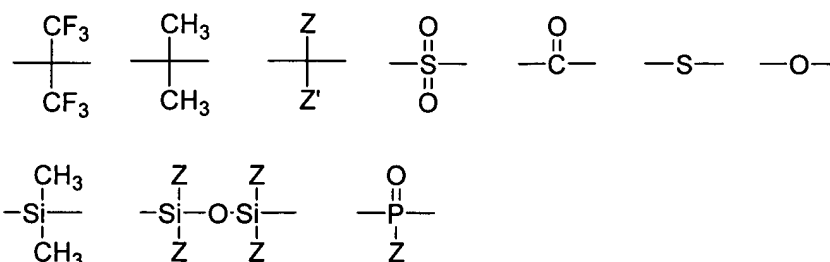


or a mixture thereof;

$-\text{R}'-$ is

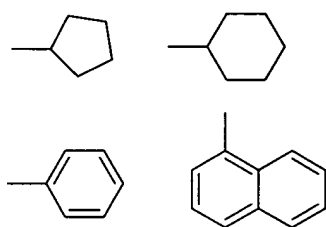


$-\text{R}''-$ is



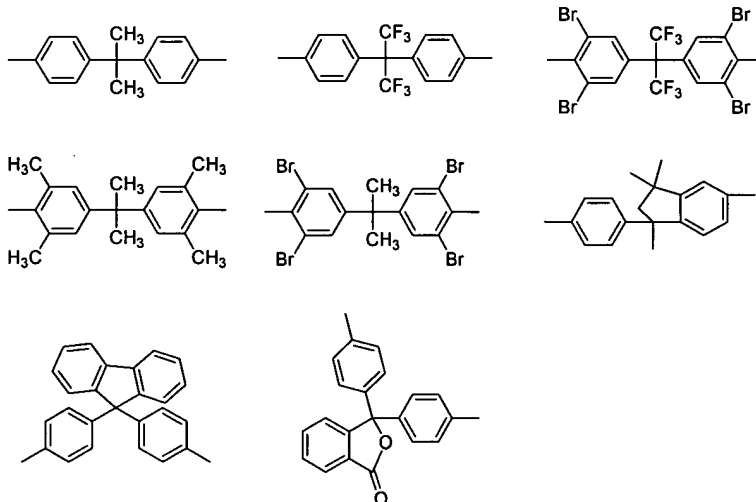
Z and Z' are:

-H, -CH₃, -CH₂CH₃, -CH₂CH₂CH₃, iso-propyl, iso-butyl, tert-butyl, -Br, -Cl, -F, -NO₂, -CN



n = 0 – 4.

Claim 16 (Original) The process of claim 15 wherein said -Ar₁- is:



Claims 17–35 (canceled).